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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/790,727

03/03/2004

Ki Won Noh

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EXAMINER

BERTHEAUD, PETER JOHN

ART UNIT

PAPER NUMBER

3746

NOTIFICATION DATE

DELIVERY MODE

07/16/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com



Office Action Summary	Application No.	Applicant(s)	
	10/790,727	NOH ET AL.	
	Examiner	Art Unit	
	Peter J. Bertheaud	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendments of 5/22/2007. It is noted that claims 1, 2, 5, and 9 have been amended and claim 6 has been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park 6,585,500 in view of Sproul 4,813,481 and in further view of Bloch 3,953,898.

Park discloses a valved piston for a reciprocating compressor comprising a valve mounting portion 12 formed at a piston and provided with at least one suction hole 12a through which a fluid introduced into a suction passage of the piston is supplied to a compression chamber of a cylinder; and a suction valve 20 mounted at the valve supporting body for opening and closing the suction hole 12a formed at the valve supporting body 12. However park fails to teach the following claimed limitations taught by Sproul.

Sproul (Fig. 3) teaches a flapper valve including a valve supporting body 70 inserted-fixed to a valve mounting portion 58 and provided with at least one hole through which a fluid may communicate through; and a valve 50 mounted at the valve

supporting body 70 to be rotatable within a certain range, for opening and closing the hole formed at the valve supporting body 58. Sproul further teaches that the valve supporting body 70 is formed as a disc shape, an outer circumferential surface thereof is fixed to the valve mounting portion 58, and the valve supporting body is provided with a slot 112 for inserting a hinge pin so that the valve can be hinge-coupled. Sproul also teaches that the slot, which receives the hinge pin, having a certain distance that the hinge pin is slidingly-moved so that the suction valve can be linearly-moved within a certain range (Sproul, Figs. 10 and 10A and col. 9, lines 24-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the valve assembly of Park, by using a hinged valve in order to make the valve automatically closeable (Sproul, col. 2, lines 45-49).

Park in view of Sproul discloses the invention as discussed above. However, Park in view of Sproul does not teach the following claimed limitations taught by Bloch.

Bloch teaches a valve comprising a valve supporting body 15, a valve 18, and a hinge pin 19. Bloch further teaches that the valve has a disc shape, and is provided with a slot at a center thereof for inserting the hinge pin 19. Bloch also discloses that the valve 18 is provided with an open/close portion 18a formed at one side on the basis of the pin hole 19 for opening and closing the hole of the valve supporting body 15, and is provided with a stopping portion 18b formed at another side and stopped by the stopper 24 of the valve supporting body 15. Bloch further discloses the open/close portion 18a

of the valve 18 is formed to have a height higher than that of the stopping portion (see 29 attached to 18 in Fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the valve assembly of Park in view of Sproul, by placing the slot for receiving the hinge pin at the center of the valve in order to create two opening of equal size thus allowing the fluid to flow freely and without restriction (Bloch, col. 3, lines 43-47).

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park 6,585,500 in view of Sproul 4,813,481, in further view of Bloch 3,953,898, and still in further view of Dickerson 4,850,059.

Park in view of Sproul and in further view of Bloch disclose the invention as discussed above. However, Park in view of Sproul and in further view of Bloch does not teach the following claimed limitations taught by Dickerson.

Dickerson teaches an apparatus for preventing backing up of sewage in a building comprising a valve supporting body 30, a valve 34, and valve mounting portion 21. Dickerson further teaches that the valve supporting body 30 is provided with at least one suction hole formed at one side on the basis of a pin hole 37, and is provided with a stopper 34A formed at another side for preventing the valve 34 from being opened more than a certain range by stopping the valve. Dickerson also teaches that the stopper 34A is formed to have a certain inclination surface of which height becomes lower towards an edge of the valve supporting body from a center thereof (see Fig. 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the valve assembly of Park in view of Sproul and in further view of Bloch, by implementing a stopper in order to prevent the valve from being moved into a vertical position (Dickerson, col. 3, lines 23-28).

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park 6,585,500 i.v., Sproul 4,813,481 i.v., Bloch 3,953,898, and in view of Taylor-McCune 5,622,484.

Park i.v., Sproul in view of Bloch discloses the invention as discussed above. However, Park i.v., Sproul in view of Bloch does not teach the following claimed limitations taught by Taylor-McCune.

Taylor-McCune teaches a valve arrangement comprising a valve supporting body 14, a valve 16, and valve mounting portion 12. Taylor-McCune further teaches that the valve mounting portion 12 of the piston is provided with a valve seat portion 34 at an upper inner circumferential surface thereof; the valve seat portion 34 is hermetically adhered to an outer circumferential surface of the valve (see Fig. 2). Taylor-McCune also teaches that the valve seat portion 34 is formed as a curved surface form so that the valve can be rotated, and the outer circumferential surface of the valve 16 is also formed as a curved surface form corresponding to the valve seat portion 34.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the valve assembly of Park i.v., Sproul in view of Bloch by having a curved portion of the valve mounting portion act as a valve

seat for a curved surface of a valve in order to create a substantial an effective valve seal (Taylor-McCune, col. 6, lines 13-17).

Response to Arguments

6. Applicant's arguments filed 5/22/2007 have been fully considered but they are not persuasive.

7. In reference to arguments to the rejections of claim 1: Examiner uses the Park reference to show the valved structure of a piston in a reciprocating compressor and never suggests that the suction valve is rotatable. Examiner then uses the Sproul reference to teach the more detailed elements of the valve, including a slot having a certain distance that the hinge pin can be slidingly-moved so that the suction valve can be linearly-moved within a certain range (support for this can be found in Sproul in col. 9, lines 24-31). Finally, Blotch teaches the conventional arrangement of having a hinge pin in the center of a suction valve. Therefore, the combination of theses references teaches the claimed limitations of claim 1 as well as 2, 5, 7, and 8.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on (571) 272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


PJB
7/2/07


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